Serial No. 10/669,320

Docket No. 28951.3026/D1

IN THE CLAIMS:

1-52. (Canceled)

(Currently Amended) A liquid crystal element, comprising: 53.

a multitude of pixel electrodes;

a liquid crystal to which an electric field is applied by said pixel electrodes, said liquid

crystal has such a structure that a four-sided minute pixel electrode is arrayed in a lattice in X, Y

directions crossing each other at a right angle on a display plane and said non-conductive

portion;

an inclined structure, wherein an electric field direction of the liquid crystal between at

least one pair of adjacent pixels is inclined against an electrode plane; and

an opposite electrode parallel with said pixel electrodes, wherein the liquid crystal is held

between said pixel electrodes and said opposite electrode, the inclined structure has a non-

conductive portion provided in a part of the opposite electrode that is opposite to a gap between

at least one pair of adjacent pixel electrodes; and

a side of the pixel electrode is opposite to the opposite electrode, and the other side of the

pixel electrode is opposite to the non-conductive portion, A liquid crystal element according to

claim 52, wherein; comprises in view of a Z direction at a right angle with X, Y directions when

a pixel of i-th position in X direction and j-th position in Y direction from an edge point or a

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standard point is defined as p (i, j), said non-conductive portion, comprises:

a first nonconductive portion, with a rectangular shape having a longer side in Y direction and a larger width in X direction than a distance between a pixel p (4m, 4n+1) and a pixel p (4m+1, 4n+1), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m, 4n) [m, n: an integer] and a pixel p (4m+1, 4n) as well as at least a part of a gap between a pixel p (4m, 4n+1) and a pixel p (4m+1, 4n+1);

a second nonconductive portion, with a rectangular shape having a longer side in X direction and a larger width in Y direction than a distance between a pixel p (4m+1, 4n+2) and a pixel p (4m+1, 4n+3), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m, 4n+2) and a pixel p (4m, 4n+3) as well as at least a part of a gap between a pixel p (4m+1, 4n+2) and a pixel p (4m+1, 4n+3);

a third nonconductive portion, with a rectangular shape having a longer side in X direction and a larger width in Y direction than a distance between a pixel p (4m+2, 4n) and a pixel p (4m+2, 4n+1), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m+2, 4n) and a pixel p (4m+2, 4n+1) as well as at least a part of a gap between a pixel p (4m+3, 4n) and a pixel p (4m+3, 4n+1); and

a fourth nonconductive portion, with a rectangular shape having a longer side in Y direction and a larger width in X direction than a distance between a pixel p (4m+2, 4n+3) and a pixel p (4m+3, 4n+3), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m+2, 4n+2) and a pixel p (4m+3, 4n+2) as well as at least a part of a gap between a pixel p (4m+2, 4n+3) and a pixel p (4m+3, 4n+3).

54. (Currently Amended) A liquid crystal element, comprising:

a multitude of pixel electrodes;

a liquid crystal to which an electric field is applied by said pixel electrodes, said liquid crystal element has a structure such that a four-sided minute pixel electrode is arrayed in a lattice in X, Y directions crossing each other at a right angle on a display plane and said non-conductive portion;

an inclined structure, wherein an electric field direction of the liquid crystal between at least one pair of adjacent pixels is inclined against an electrode plane; and

an opposite electrode parallel with said pixel electrodes, wherein the liquid crystal is held between said pixel electrodes and said opposite electrode, the inclined structure has a non-conductive portion provided in a part of the opposite electrode that is opposite to a gap between at least one pair of adjacent pixel electrodes; and

<u>a side of the pixel electrode is opposite to the opposite electrode, and the other side of the pixel electrode is opposite to the non-conductive portion, A liquid crystal element according to elaim 52, wherein, emprises: in view of a Z direction at a right angle with X, Y directions when a pixel of i-th position in X direction and j-th position in Y direction from an edge point or a standard point is defined as p (i, j), said non-conductive portion, comprises:</u>

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a first nonconductive portion, with a rectangular shape having a longer side in Y direction and a larger width in X direction than a distance between a pixel p (4m, 4n+1) and a pixel p (4m+1, 4n+1), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m, 4n) [m, n: an integer] and a pixel p (4m+1, 4n) as well as at least a part of a gap between a pixel p (4m, 4n+1) and a pixel p (4m+1, 4n+1);

a second nonconductive portion, with a rectangular shape having a longer side in X direction and a larger width in Y direction than a distance between a pixel p (4m+1, 4n+2) and a pixel p (4m+1, 4n+3), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m, 4n+2) and a pixel p (4m, 4n+3) as well as at least a part of a gap between a pixel p (4m+1, 4n+2) and a pixel p (4m+1, 4n+3);

a third nonconductive portion, with a rectangular shape having a longer side in X direction and a larger width in Y direction than a distance between a pixel p (4m+3, 4n+3) and a pixel p (4m+3, 4n+4), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m+2, 4n+3) and a pixel p (4m+2, 4n+4) as well as at least a part of a gap between a pixel p (4m+3, 4n+3) and a pixel p (4m+3, 4n+4); and

a fourth nonconductive portion, with a rectangular shape having a longer side in Y direction and a larger width in X direction than a distance between a pixel p (4m+2, 4n+2) and a pixel p (4m+3, 4n+2), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m+2, 4n+1) and a pixel p (4m+3, 4n+1) as well as at least a part of a gap between a pixel p (4m+2, 4n+2) and a pixel p (4m+3, 4n+2).

55. (Currently Amended) A liquid crystal element, comprising:

a multitude of pixel electrodes;

a liquid crystal to which an electric field is applied by said pixel electrodes, said liquid crystal element has a structure such that a four-sided minute pixel electrode is arrayed in a lattice in X, Y directions crossing each other at a right angle on a display plane and said non-conductive portion;

an inclined structure, wherein an electric field direction of the liquid crystal between at least one pair of adjacent pixels is inclined against an electrode plane; and

an opposite electrode parallel with said pixel electrodes, wherein the liquid crystal is held between said pixel electrodes and said opposite electrode, the inclined structure has a non-conductive portion provided in a part of the opposite electrode that is opposite to a gap between at least one pair of adjacent pixel electrodes; and

a side of the pixel electrode is opposite to the opposite electrode, and the other side of the pixel electrode is opposite to the non-conductive portion, A liquid crystal element according to elaim 52, wherein, comprises: in view of a Z direction at a right angle with X, Y directions when a pixel of i-th position in X direction and j-th position in Y direction from an edge point or a standard point is defined as p (i, j), said non-conductive portion, comprises:

a first nonconductive portion, with a rectangular shape having a longer side in Y direction and a larger width in X direction than a distance between a pixel p (4m, 4n+1) and a pixel p

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(4m+1, 4n+1), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m, 4n) [m, n: an integer] and a pixel p (4m+1, 4n) as well as at least a part of a gap between a pixel p (4m, 4n+1) and a pixel p (4m+1, 4n+1);

a second nonconductive portion, with a rectangular shape having a longer side in X direction and a larger width in Y direction than a distance between a pixel p (4m+1, 4n+2) and a pixel p (4m+1, 4n+3), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m, 4n+2) and a pixel p (4m, 4n+3) as well as at least a part of a gap between a pixel p (4m+1, 4n+2) and a pixel p (4m+1, 4n+3);

a third nonconductive portion, with a rectangular shape having a longer side in X direction and a larger width in Y direction than a distance between a pixel p (4m+3, 4n+1) and a pixel p (4m+3, 4n+2), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m+2, 4n+1) and a pixel p (4m+2, 4n+2) as well as at least a part of a gap between a pixel p (4m+3, 4n+1) and a pixel p (4m+3, 4n+2); and

a fourth nonconductive portion, with a rectangular shape having a longer side in Y direction and a larger width in X direction than a distance between a pixel p (4m+2, 4n) and a pixel p (4m+3, 4n), which includes an opposite electrode corresponding to each of at least a part of a gap between a pixel p (4m+2, 4n-1) and a pixel p (4m+3, 4n-1) as well as at least a part of a gap between a pixel p (4m+2, 4n) and a pixel p (4m+3, 4n).

56. (Currently Amended) The A liquid crystal element according to Claim 53, wherein: said four-sided minute pixel electrode is rectangular in its plane shape has a rectangular

shape; and

an area in which each of <u>the</u> first to fourth <u>nonconductive</u> <u>non-conductive</u> portions with a rectangular shape, which <u>include</u> <u>includes</u> said opposite electrode, overlaps with said rectangular pixel electrode <u>and</u> has a narrower width in a direction of a longer side of the pixel electrode than a width in a direction of a shorter side of the pixel electrode, in view of <u>the</u> Z direction.

- 57. (Currently Amended) <u>The A liquid crystal element according to Claim 53</u>, wherein said four-sided minute pixel electrode is square in its plane shape.
- 58. (Currently Amended) The A liquid crystal element according to Claim 53, wherein said four-sided minute pixel electrode is a pixel electrode for a color display in which a pixel for three primary colors is arrayed in a mosaic.
- 59. (Currently Amended) The A liquid crystal element according to Claim 56, wherein said four-sided minute pixel electrode is composed comprised of three four-sided minor pixel electrodes for three primary colors, which are arrayed vertically to a direction of a longer side of said first to fourth nonconductive non-conductive portions with a rectangular shape.
- 60. (Currently Amended) <u>The A liquid crystal element according to Claim 53</u>, wherein said nonconductive non-conductive portion with a rectangular shape is a nonconductive portion with has a lap of 2μm in which a width of its shorter side is larger by 4μm or more than a

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gap between two opposite pixels through its longer side.

61. (Currently Amended) The A liquid crystal element according to Claim 53, comprising a group of minor nonconductive non-conductive portions which include an opposite electrode corresponding to at least a part of a gap between two opposite pixel electrodes or minor pixel electrodes through two longer sides of the nonconductive non-conductive portion, instead of at least one of said first to fourth nonconductive non-conductive portions.

62. (Currently Amended) A liquid crystal element, comprising:

a multitude of pixel electrodes;

a liquid crystal to which an electric field is applied by said pixel electrodes, said liquid crystal element has a structure such that a four-sided minute pixel electrode is arrayed in a delta system for a color display on a display plane;

an inclined structure, wherein an electric field direction of the liquid crystal between at least one pair of adjacent pixels is inclined against an electrode plane; and

an opposite electrode parallel with said pixel electrodes, wherein the liquid crystal is held between said pixel electrodes and said opposite electrode, the inclined structure has a non-conductive portion provided in a part of the opposite electrode that is opposite to a gap between at least one pair of adjacent pixel electrodes; and

a side of the pixel electrode is opposite to the opposite electrode, and the other side of the pixel electrode is opposite to the non-conductive portion, A liquid crystal element according to elaim 52, wherein, and said non-conductive portion comprises: when a pixel row of i-th position from a bottom side upward is defined as q(i), and a group of three adjacent pixels of red, green and blue, which is composed of one of red, green and blue pixels in an odd pixel row q(2m+1) [m: an integer] and one of red, green and blue pixels in an even pixel row q(2m+2), is defined as a group of pixels for a color display and a group of pixels for a color display of j-th position from a left side on q(2m+1) and q(2m+2) is defined as Gq(j), said non-conductive portion, comprises:

a first T-shaped nonconductive portion which includes an opposite electrode corresponding to each of at least a part of a gap between two adjacent pixels on q(2m+1) in a group of pixels for a color display composed of two pixels on q(2m+1) and a pixel on q(2m+2) as well as at least a part of a pixel on q(2m+2) facing said two pixels on q(2m+1);

a first reverse T-shaped nonconductive portion adjacent to said first T-shaped nonconductive portion, which includes an opposite electrode corresponding to each of at least a part of a gap between two adjacent pixels on q(2m+2) in a group of pixels for a color display composed of a pixel on q(2m+1) and two pixels on q(2m+2) as well as at least a part of a pixel on q(2m+1) facing said two pixels on q(2m+2);

a second T-shaped nonconductive portion shifted leftward by a pixel from said first T-shaped nonconductive portion, which includes an opposite electrode corresponding to each of at least a part of a gap between two adjacent pixels on q(2m+3) in a group of pixels for a color display composed of two pixels on q(2m+3) and a pixel on q(2m+4) as well as at least a part of a

pixel on q(2m+4) facing said two pixels on q(2m+3);

a second reverse T-shaped nonconductive portion adjacent to said second T-shaped nonconductive portion, which includes an opposite electrode corresponding to each of at least a part of a gap between two adjacent pixels on q(2m+4) in a group of pixels for a color display composed of a pixel on q(2m+3) and two pixels on q(2m+4) as well as at least a part of a pixel on q(2m+3) facing said two pixels on q(2m+4);

a third T-shaped nonconductive portion shifted leftward by a pixel from said second T-shaped nonconductive portion, which includes an opposite electrode corresponding to each of at least a part of a gap between two adjacent pixels on q(2m+5) in a group of pixels for a color display composed of two pixels on q(2m+5) and a pixel on q(2m+6) as well as at least a part of a pixel on q(2m+6) facing said two pixels on q(2m+5); and

a third reverse T-shaped nonconductive portion adjacent to said third T-shaped nonconductive portion, which includes an opposite electrode corresponding to each of at least a part of a gap between two adjacent pixels on q(2m+6) in a group of pixels for a color display composed of a pixel on q(2m+5) and two pixels on q(2m+6) as well as at least a part of a pixel on q(2m+5) facing said two pixels on q(2m+6).

63. (Currently Amended) <u>The A liquid crystal element according to Claim 62, comprising:</u>

a longitudinal minor nonconductive non-conductive portion forming a longitudinal area of the nonconductive non-conductive portion between adjacent pixels in the same pixel row;

a lateral minor nonconductive non-conductive portion forming a lateral area between said adjacent pixels and a pixel in the same group of pixels for a color display as said adjacent pixels, which is opposite to both of these pixels; and

a cutting portion of the nonconductive non-conductive portion dividing said longitudinal minor nonconductive non-conductive portion and said lateral minor nonconductive non-conductive portion, instead of at least one of said first to third T-shaped and reverse T-shaped nonconductive portions.

64. (Currently Amended) <u>The A liquid crystal element according to Claim 62</u>, wherein said longitudinal minor nonconductive non-conductive portion and <u>said</u> lateral minor nonconductive non-conductive portion instead of at least one of said first to third T-shaped and reverse T-shaped nonconductive portions is a nonconductive non-conductive portion with a lap of 2μm having a common area with a width of at least 2μm, in view of <u>a</u> Z direction at a right angle with a display plane on which a pixel is arrayed.

65. (Canceled)